

*Crepidula plana* Say. In aperture of dead *Polinices duplicata* Say.

*Natica canrena* Lam. Rare, sand bars.

*Polinices duplicata* Say. Common on sand bars.

*Sigaretus perspectivus* Say. Not common, sand bars.

*Turbo castaneus* Gmel. Rare, low-water line.

*Fissuridea alternata* Say. Dead, low-water line.

#### CLAM BAYOU

*Venus campechiensis* Gmel. Common.

*Barnea costata* Linn. Not common, buried in sand and mud.

These two species were peculiar to this part of the island as far as I was able to ascertain. All other species that were found here were also found at Tarpon Bay. A single fragment of *Voluta junonia* Hwass. was found on the beach near this locality.

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#### NOTES ON THE ANATOMY AND TAXONOMY OF CERTAIN LAMPSILINAE FROM THE GULF DRAINAGE

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BY A. E. ORTMANN, PH. D.

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1. PTYCHOBANCHUS GREENI (Conrad) (1834); PTYCHOBANCHUS FOREMANIANUM (Lea) (1842); PTYCHOBANCHUS TRINACRUM (Lea) (1861).

Simpson (1914, pp. 336-338) gives these as separate species, but he unites (and rightly so) *woodwardianus* Lea (1857) and *velatus* Conrad (1853) with *foremanianus*, and *simplex* Lea (1845) and *flavescens* Lea (1845) with *greeni*.

The three species admitted by Simpson belong to the Alabama drainage, and the first (*greeni*) is reported from Black Warrior River, the two others from the Coosa River. Simpson points out the possible identity of *trinacrus* with *foremanianus*. He distinguishes *greeni* by being smaller and more delicate, and having a more nearly elliptical outline.

It is impossible for me to see in *trinacrus* anything but an individual variation of *foremanianus*, chiefly, since shells similar to this have never been found subsequently. The

characters given for *greeni* can be recognized in most cases, and, in addition, I should say that *greeni*, from the Black Warrior River, has the rays poorly developed, and has no blotches, while *foremanianum*, from the Coosa, has more distinct rays and blotches.

Specimens from Cahaba River approach *greeni* in shape and color markings, yet the latter are often more distinct, showing rays, but without forming blotches.

Thus there are two types of *Ptychobranchnus* in the Alabama system, the one belonging to the Black Warrior and Cahaba, the other to the Coosa, but they are not sharply separated. Many Coosa specimens have poorly developed rays and no blotches; the shape is very variable, not always triangular; and, on the other hand, there are specimens in the Cahaba, and also in the Black Warrior, which have more distinct rays, and others which are somewhat triangular. Thus I think it is best to regard these forms as local varieties of the same species, which should bear the name: *Ptychobranchnus greeni* (Conrad) (1834). The typical form is found in Black Warrior and Cahaba Rivers, while the variety, *Pt. greeni formanianum* (Lea) (1842) represents this in the Coosa River.<sup>1</sup>

*Anatomy.* Already Lea has described and figured the marsupium and glochidium of *U. woodwardianus* and *foremanianus*. The marsupium places these forms undoubtedly into the genus *Ptychobranchnus* (see: Ortman, Ann. Carnegie Mus. 8, 1912, p. 308). I have material of the soft parts from the following localities.

Coosa River, Wilsonville, Shelby Co., Ala.—1 gravid female (without shell), H. H. Smith coll., Nov. 4, 1911.

Chatooga River, Cedar Bluff, Cherokee Co., Ala.—1 gravid female (without shell), H. H. Smith coll., Nov. 1910.

Black Warrior River, Walker Co., Ala.—6 gravid females (without shells), H. H. Smith coll., Oct. 15, 1912.

The first two localities undoubtedly represent the *foremani-*

<sup>1</sup> Ball (Ecology 3, 1922, p. 112) distinguishes, in the Black Warrior River, a third form: *Ptychobranchnus greeni flavescens*, which apparently should be regarded as the compressed headwaters-form of *greeni*.

*anum*-type, the last typical *greeni*, since many shells are at hand from a number of localities in the various drainages, showing the shell-characters as described above. Glochidia were present in all soft parts, except one of *greeni*, and thus the breeding season apparently begins in autumn.

No unusual features are shown in the soft parts. It should be mentioned, however, that the inner lamina of the inner gills is, in one specimen, entirely connected with the abdominal sac, while in the others it is more or less free behind: the maximum is about one half of the length of the abdominal sac. The number of folds of the marsupium varies according to the size of the individual, from 8 to 12. I do not observe any dark pigment on the edge of the marsupium, but the material has been a long time in alcohol. The placentae are the usual shape and quite solid. Glochidium subovate, without hooks, higher than long, L. 0.15, H. 0.18 mm: thus they are somewhat smaller than those of *Pt. fasciolare* (Raf.).

*The genus Medionidus in the Alabama drainage.*

*Medionidus conradicus* (Lea) (1934), common in the headwaters of the Cumberland and Tennessee drainages (see: *M. plateolus* (Raf.) Ortman, Proc. Amer. Philos. Soc. 57, 1918, p. 575), has been reported also from the Alabama system, but according to my observations, this is incorrect. The genus is represented, there, indeed, but by different forms, which may be distinguished as follows.

- a<sub>1</sub> Color rays not reticulated or spotted, but straight and continuous, the finer ones sometimes wavy. Corrugations of posterior slope rather fine. *M. conradicus*
- a<sub>2</sub> Color rays reticulated or interrupted, spotted. Corrugations of posterior slope coarser.
- b<sub>1</sub> Rays poorly developed, forming, over the whole surface, a painting of a reticulated character. No distinct posterior ridge. Posterior end of shell not pointed. Nacre bluish. *M. parvulus*
- b<sub>2</sub> Rays better developed, rather broad, but also composed of reticulations, or interrupted. Posterior ridge distinct. Posterior end of shell pointed. Nacre often of reddish or salmon color. *M. acutissimus*

2. *MEDIONIDUS PARVULUS* (Lea) (1860).

Simpson, Descr. Cat. 1914, p. 248.

*Type-locality*: Coosa River, Ala., and "Chattanooga, Ga." (surely Chattooga River, Ga. is meant). Simpson adds: Swamp Creek, northwest Ga. (tributary to Conasauga River, in Whitfield Co., Ga.).

The Carnegie Museum possesses 15 specimens of this species. Exact localities are recorded for the following.

Cahaba River, Lily Shoals, Bibb Co., Ala.—5 spec., R. E. Call coll.

Coosa River, Weduska Shoals, Shelby Co., Ala.—1 spec., H. H. Smith coll.

Coosa River, near Upper Clear Creek, Talladega Co., Ala., H. H. Smith coll.—1 spec.

Coosa River, Riverside, St. Clair Co., Ala.—1 spec., H. H. Smith coll.

Choccolocco Creek, Jackson Shoals, Talladega Co., Ala.—1 spec., H. H. Smith coll.

Conasauga River, Conasauga, Polk Co., Tenn.—2 gravid females (with soft parts), A. E. Ortmann coll., May 24, 1915.

*M. parvulus* is a *M. conradicus* with the painting of a reticulate character, the rays not or poorly developed, and the corrugations of the posterior slope somewhat coarser. Lea (Obs. 11, 1867) has described the soft parts, and also the glochidium. According to him, the marsupium has 10 ovisacs, is located in the middle of the outer gill, occupying one third of its length. The inner gills are free from the abdominal sac over half of its length, and the posterior half of the mantle-margin is crenulated. The glochidium is "elongate pouch shaped".

According to my two females, the anatomy is practically identical with that of *M. conradicus* (Ann. Car. Mus. 8, 1912, p. 335; NAUT. 28, 1915, p. 142; NAUT. 34, 1921, p. 90). Inner lamina of inner gills connected with abdominal sac anteriorly for about half of its length. Papillae of mantle margin small, with exception of 1 or 2 anterior ones, which are remarkably long and subcylindrical. Marsupium larger or smaller, depending on size of shell, located near the middle of the gill, number of ovisacs up to 20. Color of soft parts the

same as in *M. conradicus* (blackish), of marsupium white, with no pigment on edge. Glochidium: L. 0.19, H. 0.25 mm., thus corresponding to the minimum measurements known in *conradicus*. Shape the same, subspatulate.

3. *MEDIONIDUS ACUTISSIMUS* (Lea) (1831).

Simpson, 1914, p. 251. A synonym is *U. rubellinus* Lea (1857), which represents an old shell, while *acutissimus* is young.

The *type-locality* for *acutissimus* is the Alabama River, and it has been reported (by Conrad) also from Black Warrior River, Erie, Greene Co., Ala. (I was unable to locate a place of that name). *U. rubellinus* is from Othcalooga Creek, Gordon Co., Ga.

I have 16 specimens with the following exact localities.

Sipsey River, Texas, Marion Co., Ala.—3 spec., H. H. Smith coll.

Cahaba River, Gurnee, Shelby Co., Ala.—1 spec., H. H. Smith.

Coosa River, Weduska Shoals, Shelby Co., Ala.—2 spec., H. H. Smith coll.

Talladega Creek, Talladega Co., Ala.—4 specimens, Hartman collection.

Choccolocco Creek, Jackson Shoals, Talladega Co., Ala.—1 spec., H. H. Smith.

Chattooga Creek, Trion, Chatooga Co., Ga.—2 males, 1 gravid (discharging) female, (all with soft parts), A. E. Ortmann coll., May 19, 1915.

(To be continued)

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A KEY TO THE FAMILY TEREBRIDAE \*

BY PAUL BARTSCH

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In working up the Terebridae of the Mazatlantic faunal area, it was found desirable to subject the entire family to a critical examination, and the large collections in the United States National Museum have furnished some rather interesting infor-